IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
(Attorney Docket No. 006379.00005)

In re U.S. Patent Application of Baruch Gedalia, et al.	)	
	)	Art Unit: 3633
Application No. 10/781,602	)	
	)	Examiner: Branon C. Painter
Filed: February 18, 2004	)	
	)	Confirmation No. 2672
For: METHOD OF REINFORCING A METAL CONTAINER AND REINFORCED METAL CONTAINER	)	

BRIEF ON APPEAL

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This is an appeal brief in accordance with 37 CFR §1.192 filed in support of Applicants' May 16, 2008 Notice of Appeal. Appeal is taken from the Advisory Action dated May 2, 2008 and the Final Office Action dated March 31, 2008. Should any additional fees be due, the Commissioner is authorized to charge such fee to Deposit Account No. 19-0733.

I. REAL PARTY IN INTEREST

The owner of this application, and the real party in interest, is Freyssinet International (STUP), Velizy Cedex (FR).

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1, 3-8, 10-15, and 17 remain in the application. All pending claims (1, 3-8, 10-15, and 17) stand rejected. Applicant is appealing all pending claims (1, 3-8, 10-15, and 17). All claims are shown in the attached appendix.

IV. STATUS OF AMENDMENTS

An Amendment has been filed on April 17, 2008, pursuant to 37 C.F.R. §§ 1.116, before or on the same date of filing this appeal. The Amendment filed April 17, 2008 amended claims 1, 8, 15 and 17 and withdrew claims 2, 9, 16 and 18. No new claims were added. The claims are listed in the attached Appendix and discussed herein as amended by the Amendment.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In making reference herein to various portions of the specification and drawings in order to explain the claimed invention (as required by 37 CFR §41.37(c)(1)(v)), Applicant does not intend to limit the claims. All references to the specification and drawings are illustrative unless otherwise explicitly stated.

Aspects of the claimed subject matter relate to "the reinforcement of metal tanks or containers against seismic or paraseismic stresses." (Specification as filed, ¶ 4, lines 1-2). Specifically, aspects of the claimed subject matter relate to "containers made of sheet steel having a relatively small thickness in order to limit the manufacturing cost." (Specification as filed, ¶ 5, lines 1-2). In embodiments of the invention, bands of carbon fibre fabric are bonded to the external surface of the metal container. (Specification as filed, ¶ 22, lines 1-2; ¶ 24, line 1). "[T]he carbon fibre fabric bands may be positioned perpendicular to the vertical axis [] of the container . . . ." (Specification as filed, ¶ 24, lines 3-4). The carbon fibres within the fabric bands "may have a principal direction within the fabric." (Specification as filed, ¶ 25, line 1). "[I]t may be advantageous to place the carbon fibre fabric on the container 1 in such a way that most of the fibres are oriented horizontally, that is to say perpendicular to the vertical axis 5 of the cylindrical container." (Specification as filed, ¶ 25, lines 3-5). "By positioning the fibres of the carbon fibre fabric in an essentially horizontal direction, it is possible to provide a high resistance to buckling." (Specification as filed, ¶ 25, lines 7-9).

There are four (4) independent claims (claims 1, 8, 15 and 17) pending in the application. Independent claim 1 is directed towards a "[m]ethod of reinforcing a metal container against seismic or paraseismic stresses . . ." with three elements. The first element recites that "the metal container is surrounded over at least part of its height with carbon fibre bonded to the external surface of the metal container . . . ." Figure 2 shows a metal container 1 where "[a] reinforcement is applied to the container 1 . . . ." (Specification as filed, Figure 2; ¶ 21, line 1). The "reinforcement consists in bonding the carbon fibre fabric 3 to at least part of the external surface of the container 1." (Specification as filed, Figure 2; ¶ 22, lines 1-2).

The second element recites that "the carbon fibre fabric is placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to an axis of the metal container . . . ." Figure 2 shows one

embodiment of the invention with "the carbon fibre fabric [] cut into bands . . . then applied to the external surface of the container 1." (Specification as filed, Figure 2; ¶ 24, lines 1-2). "[T]he carbon fibre fabric may be positioned perpendicular to the vertical axis 5 of the container, as shown in Figure 2. (Specification as filed, Figure 2; ¶ 24, lines 3-5).

The third element recites that the "carbon fibre fabric [is] bonded to the external surface of the metal container in such a way that the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." In an embodiment of the invention, the fibres "have a principal direction within the fabric." (Specification as filed, ¶ 25, line 1). "[I]t may be advantageous to place the carbon fibre fabric on the container 1 in such a way that most of the fibres are oriented horizontally, that is to say perpendicular to the vertical axis 5 of the cylindrical container." (Specification as filed, ¶ 25, lines 3-5). "By positioning the fibres of the carbon fibre fabric in an essentially horizontal direction, it is possible to provide a high resistance to buckling." (Specification as filed, ¶ 25, lines 7-9).

Independent claim 8 is directed towards a "[m]etal container reinforced against seismic or paraseismic stresses . . . ." with three elements. The first element recites that the metal container is "surrounded over at least part of its height with carbon fibre fabric bonded to the external surface of the metal container . . . ." Figure 2 shows a metal container 1 where "[a] reinforcement is applied to the container 1 . . . ." (Specification as filed, Figure 2; ¶ 21, line 1). The "reinforcement consists in bonding the carbon fibre fabric 3 to at least part of the external surface of the container 1." (Specification as filed, Figure 2; ¶ 22, lines 1-2).

The second element recites that the "carbon fibre fabric [is] placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to an axis of the metal container . . . ." Figure 2 shows one embodiment of the invention with "the carbon fibre fabric [] cut into bands . . . then applied to the external surface of the container 1." (Specification as filed, Figure 2; ¶ 24, lines 1-2). "[T]he carbon fibre fabric may be positioned perpendicular to the vertical axis 5 of the container, as shown in Figure 2. (Specification as filed, Figure 2; ¶ 24, lines 3-5).

The third element recites that the "carbon fibre fabric is bonded to the external surface of the metal container in such a way that the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." In an embodiment of the invention, the fibres "have a principal direction within the fabric." (Specification as filed, ¶ 25,

line 1). "[I]t may be advantageous to place the carbon fibre fabric on the container 1 in such a way that most of the fibres are oriented horizontally, that is to say perpendicular to the vertical axis 5 of the cylindrical container." (Specification as filed, ¶ 25, lines 3-5). "By positioning the fibres of the carbon fibre fabric in an essentially horizontal direction, it is possible to provide a high resistance to buckling." (Specification as filed, ¶ 25, lines 7-9).

Independent claim 15 is directed towards a "method of reinforcing a generally cylindrical metal container, having an axis, against seismic or paraseismic stresses . . . ." with 2 elements. The first element recites "passively surrounding at least part of its axial height with carbon fibre fabric over the external surface of the metal container by carbon fibre fabric bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to the axis of the metal container and bonding the fabric to the outside metal surface with an adhesive." Figure 2 shows a cylindrical metal container 1 where "[a] reinforcement is applied to the container 1 . . . ." (Specification as filed, Figure 2; ¶ 21, line 1). The "reinforcement consists in bonding the carbon fibre fabric 3 to at least part of the external surface of the container 1." (Specification as filed, Figure 2; ¶ 22, lines 1-2). Figure 2 shows one embodiment of the invention with "the carbon fibre fabric [] cut into bands . . . then applied to the external surface of the container 1." (Specification as filed, Figure 2; ¶ 24, lines 1-2). "[T]he carbon fibre fabric may be positioned perpendicular to the vertical axis 5 of the container, as shown in Figure 2. (Specification as filed, Figure 2; ¶ 24, lines 3-5). "The carbon fibre fabric is bonded to the external surface of the container by means of suitable resins." (Specification as filed, ¶ 26, lines 1-2). In one embodiment of the invention, "[t]he carbon fibre fabric is positioned all around [the] external circumference of the container so as to [] encircle the latter. This jacketing therefore constitutes a passive hoop reinforcement around the container . . . ." (Specification as filed, ¶ 27, lines 1-3).

The second element recites that the "carbon fibre fabric compris[es] carbon fibres predominantly along a direction substantially perpendicular to the axis of the metal container." In an embodiment of the invention, the fibres "have a principal direction within the fabric." (Specification as filed, ¶ 25, line 1). "[I]t may be advantageous to place the carbon fibre fabric on the container 1 in such a way that most of the fibres are oriented horizontally, that is to say perpendicular to the vertical axis 5 of the cylindrical container." (Specification as filed, ¶ 25, lines 3-5). "By positioning the fibres of the carbon fibre fabric in an essentially horizontal

direction, it is possible to provide a high resistance to buckling." (Specification as filed, ¶ 25, lines 7-9).

Independent claim 17 is directed towards a "metal container reinforced against seismic or paraseismic stresses . . ." comprising three elements. The first element is a "generally cylindrical container with a longitudinal axis surrounded at least over part of its height with carbon fibre fabric passively bonded by adhesive to the external surface of the metal container . . . ." Figure 2 shows a cylindrical metal container 1 where "[a] reinforcement is applied to the container 1 . . . ." (Specification as filed, Figure 2; ¶ 21, line 1). The "reinforcement consists in bonding the carbon fibre fabric 3 to at least part of the external surface of the container 1." (Specification as filed, Figure 2; ¶ 22, lines 1-2). "The carbon fibre fabric is bonded to the external surface of the container by means of suitable resins." (Specification as filed, ¶ 26, lines 1-2). In one embodiment of the invention, "[t]he carbon fibre fabric is positioned all around [the] external circumference of the container so as to [] encircle the latter. This jacketing therefore constitutes a passive hoop reinforcement around the container . . . ." (Specification as filed, ¶ 27, lines 1-3).

The second element is the "carbon fibre fabric [] placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to the axis of the metal container . . . ." Figure 2 shows one embodiment of the invention with "the carbon fibre fabric [] cut into bands . . . then applied to the external surface of the container 1." (Specification as filed, Figure 2; ¶ 24, lines 1-2). "[T]he carbon fibre fabric may be positioned perpendicular to the vertical axis 5 of the container, as shown in Figure 2. (Specification as filed, Figure 2; ¶ 24, lines 3-5).

The third element is the "carbon fibre fabric comprising carbon fibres that lie predominantly along a direction substantially perpendicular to the axis of the metal container." In an embodiment of the invention, the fibres "have a principal direction within the fabric." (Specification as filed, ¶ 25, line 1). "[I]t may be advantageous to place the carbon fibre fabric on the container 1 in such a way that most of the fibres are oriented horizontally, that is to say perpendicular to the vertical axis 5 of the cylindrical container." (Specification as filed, ¶ 25, lines 3-5). "By positioning the fibres of the carbon fibre fabric in an essentially horizontal direction, it is possible to provide a high resistance to buckling." (Specification as filed, ¶ 25, lines 7-9).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- Claims 1, 3, 5-8, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Mandel (U.S. Patent No. 4,544,428).
- Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandel (U.S. Patent No. 4,544,428) in view of Toth et al. (U.S. Patent No. 4,614,279).
- Claims 5, 7, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enders et. al. (DE 3826464; Derwent 1989-062184) in view of Roy (U.S. Pub. No. 2002/0088805).
- Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fawley (U.S. Patent No. 5,289,942) in view of Wills (U.S. Patent No. 4,690,295).

ARGUMENT

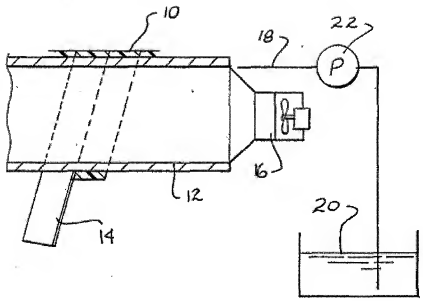
The Applicants' amendment dated April 17, 2008 amended all the pending independent claims of this application (claims 1, 8, 15 and 17) to include the feature: the carbon fibres lie "predominantly along a direction substantially perpendicular to an axis of the metal container." In the Advisory Action dated May 2, 2008, the Examiner responded by asserting that "[a]ll claims remain rejected as amendments simply combine limitations of rejected dependent claims 2, 9, 16, and 18 to rejected independent claims 1, 8, 15, and 17, respectively. The amended claims would be rejected by combining the rejections of the previously separate claims." The Examiner suggested in these previous rejections—detailed in the Final Office Action dated February 19, 2008—that the cited references disclose the feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container."

Applicants disagree and respectfully submit that none of the references of record disclose, teach nor suggest the additional feature that the carbon fibres lie "predominantly along a direction substantially perpendicular to an axis of the metal container." Thus, as further detailed in the arguments below, all of the Applicants' pending claims (claims 1, 3-8, 10-15, and 17) are patentable over the cited references.

A. Claims 1, 3, 5-8, 12, and 13 Are Not Anticipated By Mandel

Applicants' claims 1, 3, 5-8, 12 and 13 are not anticipated by Mandel because Mandel does not disclose the feature the "carbon fibre fabric bonded to the external surface of the metal container in such a way that the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container," as recited in independent claims 1 and 8. The examiner asserts that Mandel discloses this feature in element 14 of Figure 1 as "resin-impregnated fibers." (Final Office Action dated February 19, 2008; pg. 4). However, neither the Figure nor the specification of Mandel mentions the orientation of the "resin-impregnated fibers."

The only Figure of Mandel discloses the following:



(Mandel; Figure).

There is no depiction of the fibers in Figure 14. The specification of Mandel describes element 14 as: "the wrapping of resin impregnated fibers which have large breaking strength and a small coefficient of thermal expansion . . . ." (Mandel, column 2, lines 26-28). The inner region of element 14 is not described or characterized and the figure does not set forth any markings or detail regarding the particular orientation, let alone any orientation, of the "resin-impregnated fibers." In point of fact, it is most likely that the resin impregnated fibers of Mandel are randomly oriented. Thus, the disclosure of element 14 of Mandel clearly does not anticipate the Applicants' claimed feature of "carbon fibres l[ying] predominantly along a direction substantially perpendicular to an axis of the metal container."

In Mandel all other mentions of the "resin-impregnated fibers" are either directed towards the tensile advantages of carbon fibers or the process of wrapping the resin-impregnated carbon fibers. *See* (Mandel, column 1, lines 26-30; column 1, lines 46-48; column 1, lines 66-67; column 2, lines 1-2; column 2, lines 46-48). Mandel never mentions the particular orientation of these "resin-impregnated fibers." Thus, because Mandel does not disclose this claimed feature, Mandel does not anticipate Applicants' claims 1 and 8.

Further, the written description of element 14 in Mandel also does not mention any particular orientation of the "wrapping". That is Mandel does not teach placement of the "wrapping" or bands as claimed: "substantially perpendicular to the axis of the container." Figure 14 sets forth the only disclosure regarding the "wrapping" or bands and teaches a spiral wrapping forming a angle of 15° or more with respect to the axis of the container. As such, Mandel does not teach the claimed positioning of the wrapping and clearly does not set forth the combination of orientation of "wrapping" and "fibers" substantially perpendicular to the container axis. As explained in applicants' specification (¶25), the combination of the orientation of the fibers and the associated bands or wrapping is very important to prevent buckling of the containers in a seismic event, an issue not addressed in Mandel. Therefore, for at least the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection in regards to the pending independent claims 1 and 8. Accordingly, applicants respectfully submit that dependant claims 3, 5-7, 12, and 13 are not anticipated nor rendered obvious by Mandel for at least the same reasons, and therefore, respectfully request reconsideration and withdrawal of these rejections.

B. Claims 4 and 11 Are Not Obvious From Mandel In View Of Toth

Claims 4 and 11 are not obvious over Mandel in view of Toth because Mandel and Toth, in combination, do not disclose the claimed features reference including the combination wherein "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." Claims 4 and 11 are dependent from independent claims 1 and 8 respectively. Thus, both claims recite this feature. The Examiner asserted that Applicants' claims 4 and 11 were obvious from Mandel in view of Toth because Mandel discloses all the features of claims 4 and 11 except for one, "carbon fibre fabric is bonded to the external surface of the metal container so as to bypass projecting regions on the said part of the external surface of the metal container," which is disclosed by Toth. (Final Office Action dated February 19, 2008; pg. 6).

However, subsequent to the Applicants' amendment dated April 17, 2008, the Examiner has not directly re-addressed this rejection of the claims that now include the feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal

container." Rather, the Examiner suggests that claims 4 and 11 are obvious from Mandel in view of Toth after the Applicants' amendment because Mandel discloses this newly amended feature. *See* (Advisory Action dated May 2, 2008 ("The amended claims would be rejected by combining the rejections of the previously separate claims.")). In accordance with the discussion in Part A, the Applicants respectfully submit that Mandel does not disclose the claimed feature sieg. "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container."

In addition, although never suggested by the Examiner, Toth also does not disclose the feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." Toth is directed towards the fabrication of a filament-wound plastic pressure vessel. (Toth, Abstract, lines 1-2). In its particular discussion regarding the wrapping of filaments, it discloses:

> Prior to winding the reinforcement on the liner, a composite reinforcing patch **20** is applied to the liner **12** at a location where an access opening in the tank is to be provided. The reinforcing patch is comprised of a plurality of fibrous pads **22, 23, 24, 25,** and **26.** The pads **22, 24,** and **26** are woven cloth pads formed by roving bands woven in a basket weave arrangement, while the pads **23** and **25** are two-ounce fibrous matting having randomly oriented lengths of chopped fibers bonded together with a suitable low-solubility binder. The

(Toth, column 4, lines 9-30). In contrast to the Applicants' claimed feature, "the carbon fibres l[ying] predominantly along a direction substantially perpendicular to an axis of the metal container," Toth teaches a lining pad composed of "randomly oriented lengths of chopped fibers." (Toth, column 4, line 17). Thus, Toth also does not disclose this claimed feature of claims 4 and 11.

Because Mandel and Toth do not disclose all the claimed features of claims 4 and 11, claims 4 and 11 are not obvious and are patentable over Mandel in view of Toth. Therefore, for at least the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection in regards to the pending claims 4 and 11.

C. Claims 5, 7, 12, and 14 Are Not Obvious From Enders In View Of Roy

Claims 5, 7, 12 and 14 are not obvious from Enders in view of Roy because Enders and Roy, in combination, do not disclose the claimed feature "the carbon fibres lie predominantly

along a direction substantially perpendicular to an axis of the metal container." Claim 5 is dependent from currently amended independent claim 1. Claim 7 is dependent from claim 5. Claim 12 is dependant from currently amended independent claim 8. Claim 14 is dependent from claim 12. Thus, claims 5, 7, 12 and 14 currently recite the feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container."

The Examiner has not directly addressed this newly amended feature of claims 5, 7, 12 and 14. Rather, by maintaining his previous rejection of these claims, the Examiner has implied that Enders and Roy in combination disclose this feature. *See* (Advisory Action dated May 2, 2008 ("The amended claims would be rejected by combining the rejections of the previously separate claims.")). Applicants respectfully submit that neither Enders nor Roy discloses the claimed feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container."

Enders does not disclose the feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." Enders is directed towards a tank for combustible fluids "having one or more laminate fabric layers." (Enders, pg 5 (PTO 08-2553, translated copy dated February 2008)). In the most detailed description concerning the fibers of its laminate fabric layers, Enders discloses: "[a]n elastic polyaramide stretch fabric layer, which is initially highly elastic because of its special type of weaving in the laminate composite . . . . A polyaramide cord laminate layer is designated as *11f*, the polyaramide core being produced from combed individual fibers . . . ." (Enders, pg 11 (PTO 08-2553, translated copy dated February 2008)). These descriptions do not disclose any information regarding the orientation of the laminate fabric layer fibers.

Similarly, Roy also does not disclose the feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." Roy is directed towards storage tanks constructed with a double wall to contain leaks. (Roy, ¶ 1, lines 1-3). Roy discloses covering the tank with a reinforced resinous material. (Roy, ¶ 14, lines 6-8). In its most detailed description of the reinforced resinous material, Roy discloses: "[t]he wrapped inner tank and spacer means is covered with reinforced resinous material, such as fiberglass, to form an outer tank." (Roy, ¶ 23, lines 3-5). This description does not disclose any information regarding the orientation of the reinforced resinous material.

Because Enders and Roy do not disclose all the claimed features of claims 5, 7, 12 and 14, claims 5, 7, 12 and 14 are not obvious and are patentable over Enders in view of Roy. Therefore, for at least the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection in regards to the pending claims 5, 7, 12 and 14.

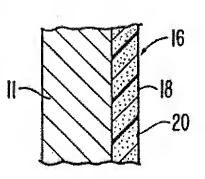
D. Claims 15 and 17 Are Not Obvious From Fawley In View Of Wills

Claims 15 and 17 are not obvious from Fawley in view of Wills because neither Fawley nor Wills disclose the claimed feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." Both independent claims 15 and 17 were amended by the Applicants' amendment dated April 17, 2008 to recite this feature. The Examiner asserts that Fawley discloses the feature in Figure 1 of the reference. (Final Office Action dated February 19, 2008; pg. 10). The Applicants respectfully submit that neither Fawley nor Wills discloses the claimed feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container."

Fawley does not disclose the feature "the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container." Fawley is directed towards "forming a reinforcing jacket of [] composite material" around fluid storage tanks. (Fawley, column 3, lines 49-52). In its specific discussion of the composite material, Fawley discloses:

> As can be seen from FIG. 2, the composite material 16 comprises a large plurality of fine, high tensile strength, lightweight nonmetallic filaments 18 which are wrapped helically around the exterior for the plates 12, in contact with the plates. Prior to wrapping, the filaments 18 are preferably grouped in rovings, each of which contains thousands of the filaments 18 having diameters less than 0.001 inch. The helical nature of the windings does not show up in the drawing figures, since the angle of the helix is small and the circumference of the tank 10 is very large. The filaments 18 are continuous, and a plurality of layers of the filaments are wound around the shell 11. Filaments 18 of glass are preferable

FIG. 2



(Fawley, column 6, lines 9-21). As can be appreciated from Figure 2 and its description, the filaments 18 are "wrapped helically around the exterior for the plates . . . ." (Fawley, column 6,

line 12). The helical orientation of the Fawley's filaments 18 does not teach the Applicants' claimed feature of the "carbon fibres l[ying] predominantly along a direction substantially perpendicular to an axis of the metal container." Furthermore, Fawley teaches the use of filaments that are continuous. (Fawley, column 6, lines 19-20). The use of continuous filaments is fundamentally distinct from the use of fibers within a fiber fabric.

Similarly, Wills also does not disclose the Applicants' claimed feature. Wills is directed towards "a container for the storage and transportation of pressurized fluids" with an "outer layer of an insulating fire resistant material . . . ." (Wills, column 1, lines 42-43, 50). In describing the insulating outer layer, Wills discloses:

> In the case of a cylindrical container, the insulating outer layer 3 may be a filament wound around the inner liner 2 either axially or circumferentially or both, or may be wrapped on the inner liner 2 in the form of a mat made of one or more layers of chopped strands of fibre. The insulating outer layer 3 may also include an adhesive resin material such as an epoxy resin which will retain the insulating outer layer on the thermoplastic inner liner. To form the insulating outer layer 3, it is preferable to arrange a first set 3*a* of axial fibres wound at a slight degree angle to the longitudinal axis of the inner liner and then overlay a second set 3*b* of hoop fibres circumferentially along the cylindrical length of the inner liner. The axial winding angle is chosen based

(Wills, column 3, lines 13-26). Although the disclosure in Wills is unclear, to the extent that Wills teaches the use of carbon fibre fabric, it does not mention any particular orientation of the fibers of the fabric. *See* (Wills, column 3, lines 13-17 ("In the case of a cylindrical container, the insulating outer layer may be a filament wound around the inner liner either axially or circumferentially or both, *or* . . . a *mat made of one or more layers of chopped strands of fibre*.") (emphasis added)). While Wills does disclose a particular orientation of "axial fibres" and "hoop fibres" for creating the outer layer, this disclosure appears to be directed at the orientation of filament windings rather than the orientation of fibres within a fabric. Thus, Wills does not teach the Applicants' claimed feature of a carbon fibre fabric with the "carbon fibres l[ying] predominantly along a direction substantially perpendicular to an axis of the metal container."

Furthermore, even if Wills could be interpreted to teach a particular orientation of fibres within a fibre fabric, Wills teaches a fibre orientation fundamentally different from the Applicants' claimed feature. Wills teaches winding axial fibers "at a slight degree angle to the

longitudinal axis . . . then overlay[ing] a second set of hoop fibres circumferentially along the cylindrical length . . . ." (Wills, column 3, lines 22-25). Wills further teaches the advantages of creating the outer layer in this manner. (Wills, column 3, lines 33-37). By teaching a combination of winding fibers "at a slight degree angle to the longitudinal axis" and "circumferentially along the cylindrical length," Wills does not disclose the Applicants' claimed feature of "carbon fibres l[ying] predominantly along a direction substantially perpendicular to an axis of the metal container."

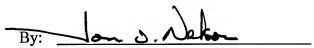
Because Fawley and Wills, in combination, do not disclose all the claimed features of claims 15 and 17, claims 15 and 17 are not obvious and are patentable over Fawley in view of Wills. Therefore, for at least the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection in regards to the pending claims 15 and 17.

CONCLUSION

The rejections contained in the Advisory Action of May 2, 2008 and the Action of February 19, 2008 should be reversed for at least the reasons recited above. Reversal of the rejections is respectfully requested.

Respectfully submitted,

Dated: September 3, 2008

By: 

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CLAIMS APPENDIX

1. (Previously Presented) Method of reinforcing a metal container against seismic or paraseismic stresses, in which the metal container is surrounded over at least part of its height with carbon fibre fabric bonded to the external surface of the metal container and in which the carbon fibre fabric is placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to an axis of the metal container, said fabric including carbon fibers, said carbon fibre fabric bonded to the external surface of the metal container in such a way that the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container.

2. (Withdrawn) Method according to Claim 1, in which the carbon fibre fabric is bonded to the external surface of the metal container in such a way that the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container.

3. (Previously Presented) Method according to Claim 1, in which the metal container is at least partly filled and in which the metal container is surrounded with a carbon fibre fabric without the metal container being emptied.

4. (Previously Presented) Method according to Claim 1, in which the carbon fibre fabric is bonded to the external surface of the metal container so as to bypass projecting regions on the said part of the external surface of the metal container.

5. (Previously Presented) Method according to Claim 1, in which the carbon fibre fabric is bonded to the external surface of the metal container in several superposed layers.

6. (Previously Presented) Method according to Claim 5, in which the number of superposed layers of the carbon fibre fabric varies with the height along the metal container.

7. (Previously Presented) Method according to Claim 5, in which the carbon fibre fabric is placed in bands and in which the superposed layers are offset with another by half the width of a band.

8. (Previously Presented) Metal container reinforced against seismic or paraseismic stresses, surrounded over at least part of its height with carbon fibre fabric bonded to the external surface of the metal container, the carbon fibre fabric being placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to an axis of the metal container, said fabric including carbon fibers, said carbon fibre fabric is bonded to the external surface of the metal container in such a way that the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container.

9. (Withdrawn) Metal container according to Claim 8, in which the carbon fibre fabric is bonded to the external surface of the metal container in such a way that the carbon fibres lie predominantly along a direction substantially perpendicular to an axis of the metal container.

10. (Previously Presented) Metal container according to Claim 8, at least partly filled, the metal container being surrounded with a carbon fibre fabric without being emptied.

11. (Previously Presented) Metal container according to Claim 8, in which the carbon fibre fabric is bonded to the external surface of the metal container so as to bypass projecting regions on the said part of the external surface of the metal container.

12. (Previously Presented) Metal container according to Claim 8, in which the carbon fibre fabric is bonded to the external surface of the metal container in several superposed layers.

13. (Previously Presented) Metal container according to Claim 12, in which the number of superposed layers of the carbon fibre fabric varies with the height along the metal container.

14. (Previously Presented) Metal container according to Claim 12, in which the carbon fibre fabric is placed in bands and in which the superposed layers are offset with respect to one another by half the width of a band.

15. (Previously Presented) A method of reinforcing a generally cylindrical metal container, having an axis, against seismic or paraseismic stresses, comprising the steps of: passively surrounding at least part of its axial height with carbon fibre fabric over the external surface of the metal container by carbon fibre fabric bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to the axis of the metal container and bonding the fabric to the outside metal surface with an adhesive, said carbon fibre fabric comprising carbon fibres predominantly along a direction substantially perpendicular to the axis of the metal container.

16. (Withdrawn) The method according to Claim 15 in which the carbon fibre fabric comprises carbon fibres predominantly along a direction substantially perpendicular to the axis of the metal container.

17. (Previously Presented) A metal container reinforced against seismic or paraseismic stresses, comprising a generally cylindrical container with a longitudinal axis surrounded at least over part of its height with carbon fibre fabric passively bonded by adhesive to the external surface of the metal container, said carbon fibre fabric being placed in bands extending substantially around the entire circumference of the metal container, predominantly in a direction substantially perpendicular to the axis of the metal container, said carbon fibre fabric comprising carbon fibres that lie predominantly along a direction substantially perpendicular to the axis of the metal container.

18. (Withdrawn) A metal container according to Claim 17 in which the carbon fibre fabric comprises carbon fibres that lie predominantly along a direction substantially perpendicular to the axis of the metal container.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.